

**CHESPIRITOS, A NEW GENUS OF LIMOSININAE
(DIPTERA: SPHAEROCERIDAE) FROM COSTA RICA**

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Abstract.—*Chespiritos sindecimus* new genus, new species, is described from specimens taken in decaying bromeliads in Costa Rica. The relationship of *Chespiritos* to other Limosiniinae is discussed.

Key Words: Diptera, Sphaeroceridae, Costa Rica, taxonomy

Chespiritos sindecimus new genus, new species, was collected around the leaf-bases of wind-downed bromeliads at 2,400 m in the Rio Macho reserve, Costa Rica. Most of the bromeliads examined were found to contain specimens of this new species, as well as specimens of an unidentified *Pterogramma* Spuler.

Terminology in this paper follows Marshall and Langstaff (1998). Terms used for the same structures in other recent papers on Sphaeroceridae are indicated in parentheses.

***Chespiritos* Marshall, new genus**

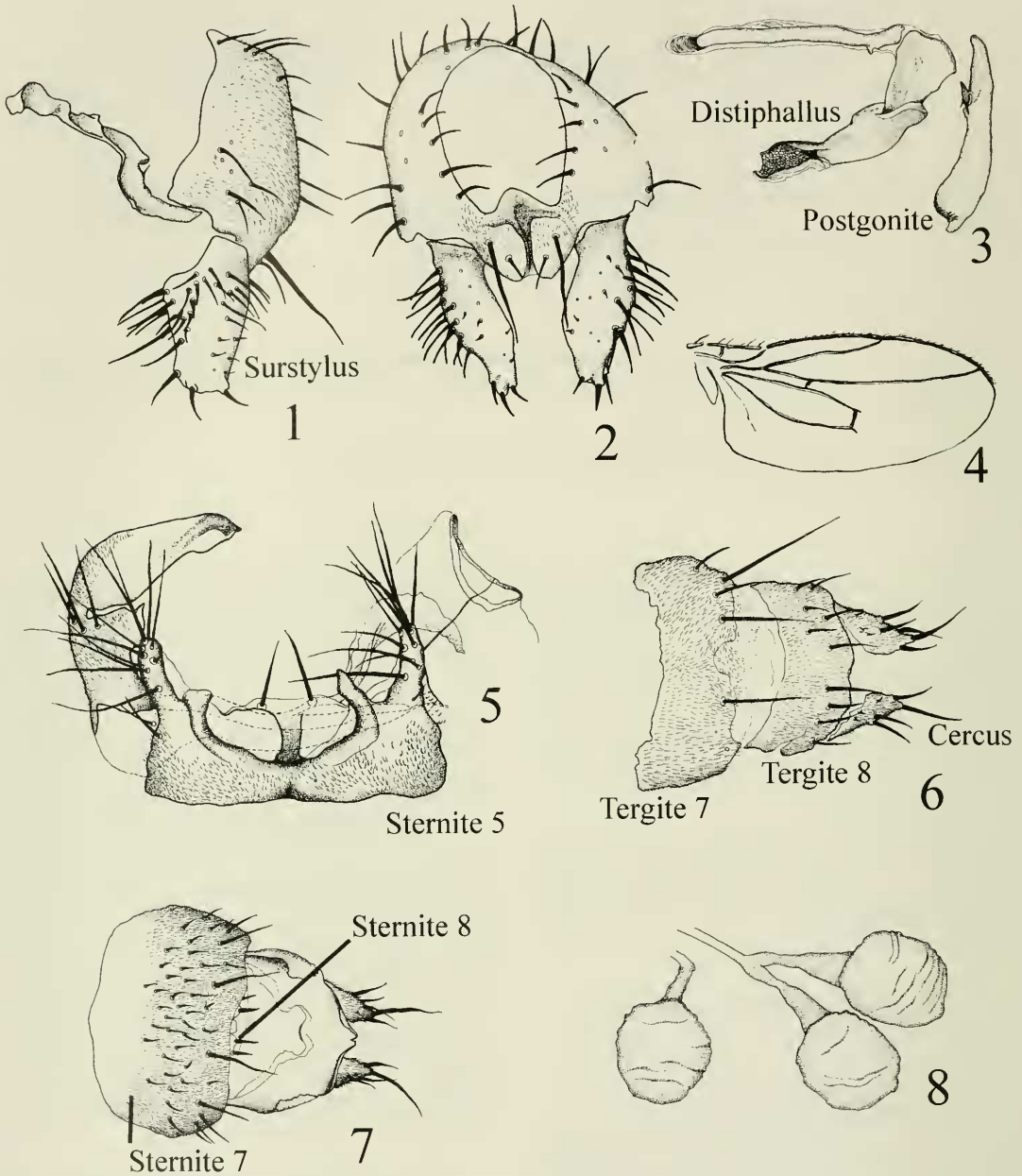
Type species.—*Chespiritos sindecimus*, new species.

Diagnostic characters and similar genera.—*Chespiritos* stands out as a distinct genus because of its broad head with a large and exposed clypeus, two pairs of large interfrontal bristles, six scutellar bristles, distinctive male genitalia, and the complete lack of a tenth tergite in the female. The most closely related genus is probably *Sclerocoelus* Marshall, with the broad lunule and well-developed intra-alar bristles providing some evidence for this relationship. *Chespiritos*, however, lacks the elaborately sclerotized male genital pouch,

complex subcercus, and broad alula which define *Sclerocoelus* (Marshall 1995), and *Sclerocoelus* lacks the basal scutellar bristles, two interfrontal bristles, highly derived phallus, and totally reduced female tergite 10 (epiproct of authors) which appear to define *Chespiritos*. Similar small basal scutellar bristles do appear elsewhere in the Sphaeroceridae (some species of the *Pullimosina* subgenus *Dahlimosina* Roháček, and three species of *Spelobia* Spuler, for example). The female tergite 10 of other Limosiniinae is occasionally reduced (as in some *Sclerocoelus*), and is occasionally absent (as in some *Pterogramma* with greatly reduced cerci), but the complete absence of tergite 10 in combination with the presence of well-developed cerci is a distinctive attribute of *Chespiritos*.

***Chespiritos sindecimus* Marshall,
new species
(Figs. 1–8)**

Description.—Length from base of antenna to wing tip 3.0 mm, general color brown, tibiae and tarsi luteous. Head strikingly broad, frontal width between eyes 3× height of interfrontal area; clypeus large, dark and exposed. Frons with two equal in-



Figs. 1-8. *Chespiritos sindecimus*. 1-3 and 5. Male abdominal structures. 1, terminalia, left lateral. 2, terminalia, posterior. 3, aedeagus and associated structures. 5, sternites 5-7. 4, Right wing of male. 6-8. Female abdominal structures. 6, tergites 7-8 and cerci. 7, spermathecae. 8, sternites 7-10 and cerci.

terfrontal bristles and a small lower setula; two large orbital bristles; inner occipital bristle large, postvertical and postocellar bristles very small. Orbit, interfrontal stripe and ocellar triangle with indistinct silver pollinosity. Palpus clavate, setulose, with

only weak apical hairs and a single preapical ventral bristle. First flagellomere flattened laterally, rounded apically; arista arising dorsolaterally, length twice head height, arisal hairs long ($5\times$ arisal width at mid-length). Prosternum bare. Thorax heavily

pollinose; 2 strong postsutural dorsocentral bristles separated by 6 rows of acrostichal setae; outer postpronotal bristle strong, both presutural and postsutural intra-alar bristles strong. Scutellum long, with 2 pairs of long marginal bristles and a pair of small basal bristles. Dorsal surface of mid tibia with 5 bristles proximally (3 anterodorsal and 2 posterodorsal); the posterodorsal bristles small and sometimes difficult to distinguish from posterodorsal setulae and 5 bristles distally (2 anterodorsal, 2 dorsal, 1 posterodorsal). Male mid tibia with an apicoventral bristle, an anteroventral bristle near middle, and a double row of short stout ventral bristles on distal half, base of mid femur with corresponding stout bristles; female mid tibia with a mid ventral and an apical ventral bristle. Hind tibia with a small anteroventral bristle at apex. Wing (Fig. 4) long, third costal sector $0.8 \times$ length of second, vein R_{2+3} gently sinuate; costa extending very far (at least 10 vein-widths) beyond apex of vein R_{4+5} ; distance between crossveins dm-cu and r-m $3 \times$ as long as dm-cu, both M_{1+2} and CuA_1 extending beyond discal cell as pigmented processes; alula narrow.

Female abdomen: Tergite 7 with a pale posteromedial notch; tergite 8 pale but convex posteromedially, laterally expanded and with differentiated posteroventral parts; tergite 10 absent (Fig. 6). Cercus short, strongly tapered, entirely setulose, with 3 small outer bristles, a long straight apical bristle and a curved inner preapical bristle. Sternite 7 with a pale posteromedial notch; sternite 8 reduced to a small, medially pale, transverse sclerite with two stout bristles on each half; sternite 10 reduced to two small plates, one under each cercus (Fig. 7). Area between sternite 8 and sternite 10 with a large, hyaline vaginal sclerite with a prominent posteromedial process. Spermathecae (3) large, spherical, transversely wrinkled, with long conical necks and short sclerotised parts of ducts (Fig. 8). Pleural membrane wrinkled and densely setose.

Male abdomen: Syntergite 1+2 twice as

long as tergite 3, middle part pale almost to hind margin. Sternite 5 small but complex, with two pairs of prominent posterior lobes, outer pair long-setose and inner pair bare and blade-like. Middle part of sternite 5 dark, very short, with a long deflexed (bent upwards) posteromedial lobe ending in two small, bristle-bearing lobes (Fig. 5). Sternite 6 with a narrow ventral part anterior to a distinct (but medially membranous) genital pouch; a distinct ring sclerite in right membrane beside genital pouch. Epandrium uniformly long-setose, subanal plate broad, weakly bilobed ventrally, subepandrial sclerite broad and arching slightly above level of subanal plate; each half of subanal plate with a single long bristle (Fig. 2). Surstylus leaf-like, with a row of stout bristles on anterior edge and a basal patch of fine bristles (Fig. 1). Hypandrium stout, deeply cleft posteriorly and with an elongate apodeme anteriorly, anterior arms long and fused both with apodeme and epandrium, no median posterior part but with small lobe connecting anterior arm to postgonite, pregonite (suspensory sclerite) small and closely appressed to postgonite. Postgonite (paramere, gonostylus) dark, flattened, apex serrate with a posteroapical lobe (Fig. 3). Basiphallus stout, wedge-like; distiphallus heavily sclerotised, tubular basally and with two detached distal dorsal lobes and a spatulate ventral lobe.

Type material.—Holotype (δ , INBio) and 9 paratypes (2 ♀ , 2 ♂ , INBio; 2 ♀ , 3 ♂ GUELPH): COSTA RICA. Cartago, Rio Macho, La Esperanza, El Guarco (8 km from km 61 Interamerican Highway) 2,400 m, LN-188200, 549800, Hoja Tapanti, in bromeliads on ground, 1.vi.1998, S. A. Marshall. Holotype and two paratype ♀ with two large mites each.

Etymology.—The genus is named after a well-known truck stop on the Interamerican Highway near the type locality; the gender is masculine. The specific name refers to the lack of tergite ten on the female abdomen.

Comments.—The type series of *Chespir-*

itos sindecimus was collected as part of an INBio (Instituto Nacional de Biodiversidad, Costa Rica) sponsored field trip for participants in a planning workshop for a major biodiversity inventory project in Costa Rica, and this description can be viewed as an initial contribution to that inventory.

ACKNOWLEDGMENTS

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